

What is claimed is:

1. An electrolysis cell comprising: a plurality of carbon anodes, having top, bottom and side surfaces, operating in molten electrolyte in an aluminum electrolysis cell, where gas bubbles are generated at the anode surfaces, and where alumina particles are added to the top of the molten electrolyte, wherein the carbon anodes have at least two inward slots passing through part of the anode along the longitudinal axis of the carbon anode and also passing through only one front surface of the anode, where the height of the slots is from about 45% to 80% of the anode thickness and the slotted front surfaces are disposed toward the center of the electrolysis cells so that generated gas bubbles are directed toward the alumina particles.
2. The electrolysis cell of claim 1, wherein some of the alumina particles float on top of the molten electrolyte and are slow to dissolve.
3. The electrolysis cell of claim 1, wherein the molten electrolyte is cryolyte at between about 900° C to 1000° C.
4. The electrolysis cell of claim 1, wherein the slot height is from about 60% to 75% of the anode thickness.
5. The electrolysis cell of claim 1, wherein the slot width is from about 9 mm to about 16 mm.
6. The electrolysis cell of claim 1, wherein aluminum is formed beneath the anodes and a metal to electrolyte interface is formed and where gas bubbles are generated

and are directed out of the slots and upward toward the surface of the molten electrolyte to contact alumina particles and help prevent alumina agglomeration.

7. The electrolysis cell of claim 1, wherein aluminum is formed beneath the anodes and a metal to electrolyte interface is formed and where gas bubbles are generated on the anode surface, flow into the slots, and pass out of the slots and upward toward the surface of the molten electrolyte, creating turbulence.

8. The electrolysis cell of claim 1, wherein aluminum is formed beneath the anodes and a metal to electrolyte interface is formed and where gas bubbles are generated and are directed out of the slots and upward toward the surface of the molten electrolyte, stabilizing the metal to bath interface.

9. The electrolysis cell of claim 1, wherein the slot width is from 9 mm to 12 mm.

10. The electrolysis cell of claim 1, wherein the bubbles generated causes electrolyte flow toward the center of the cell.

11. The electrolysis cell of claim 1, where the slots have a roof portion that is parallel to the longitudinal axis of the carbon anode.

12. The electrolysis cell of claim 1, where the slots have a roof portion with an upward angle of from about 1° to about 5°.